

## Abstract

Developing and Benchmarking a Comprehensive Set of Tutorials for High Performance Computing. Peter Schmitt (DePaul University, Chicago, IL 60604. Mike Dvorak (Argonne National Laboratory, Argonne, IL 60439).

High performance computing via super computers or large clusters of networked computers is becoming increasingly in high-demand to help scientists make new discoveries. Traditional serial (one computer) programming techniques are inadequate to develop software for high performance parallel computing. A comprehensive set of parallel programming tutorial software was developed and analyzed in this paper. The tutorials include four different input/output implementations, runtime and post visualization in serial and parallel, and a strong focus on good software engineering practices. An analysis of the tutorials provide evidence of why good software engineering techniques are necessary for high performance computing.

Category: Computer Science

School Author Attends: DePaul University

DOE National Laboratory Attended: Argonne National Laboratory

Mentor's Name: Mike Dvorak

Phone: (630) 252-4296

e-mail Address: [dvorak@mcs.anl.gov](mailto:dvorak@mcs.anl.gov)

Presenter's Name: Peter Schmitt

Mailing Address: 905 Whitegate Drive

City/State/ZIP: Mt. Prospect, IL 60056

Phone: (773) 610-6832

e-mail Address: [pschmitt@students.depaul.edu](mailto:pschmitt@students.depaul.edu)